

1. Using an interval or intervals, describe all the  $x$ -values within or including a distance of the given values.

No more than 3 units from the number  $-10$ .

- A.  $[-13, -7]$
  - B.  $(-13, -7)$
  - C.  $(-\infty, -13] \cup [-7, \infty)$
  - D.  $(-\infty, -13) \cup (-7, \infty)$
  - E. None of the above
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2. Using an interval or intervals, describe all the  $x$ -values within or including a distance of the given values.

Less than 6 units from the number  $-6$ .

- A.  $[-12, 0]$
  - B.  $(-\infty, -12) \cup (0, \infty)$
  - C.  $(-\infty, -12] \cup [0, \infty)$
  - D.  $(-12, 0)$
  - E. None of the above
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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 - 5x \leq \frac{-36x - 4}{8} < 4 - 7x$$

- A.  $(a, b]$ , where  $a \in [-14.25, -9]$  and  $b \in [-1.5, 4.5]$
- B.  $[a, b)$ , where  $a \in [-14.25, -12]$  and  $b \in [0, 4.5]$
- C.  $(-\infty, a) \cup [b, \infty)$ , where  $a \in [-14.25, -7.5]$  and  $b \in [0.75, 3]$
- D.  $(-\infty, a] \cup (b, \infty)$ , where  $a \in [-13.5, -10.5]$  and  $b \in [0.75, 4.5]$

E. None of the above.

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4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-6 + 9x \leq \frac{84x + 5}{9} < 9 + 3x$$

- A.  $(-\infty, a) \cup [b, \infty)$ , where  $a \in [18, 20.25]$  and  $b \in [-1.57, -0.15]$   
B.  $[a, b)$ , where  $a \in [18, 23.25]$  and  $b \in [-6, 0]$   
C.  $(-\infty, a] \cup (b, \infty)$ , where  $a \in [17.25, 23.25]$  and  $b \in [-2.62, -0.67]$   
D.  $(a, b]$ , where  $a \in [18.75, 24]$  and  $b \in [-1.8, -0.15]$   
E. None of the above.
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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-8 + 6x > 9x \text{ or } -3 + 6x < 9x$$

- A.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [0.75, 5.25]$  and  $b \in [0, 5.25]$   
B.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-6.75, -0.75]$  and  $b \in [-3.75, 1.5]$   
C.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-5.25, 0.75]$  and  $b \in [-1.5, 1.5]$   
D.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [0, 3]$  and  $b \in [1.5, 6]$   
E.  $(-\infty, \infty)$
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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-9}{2} - \frac{10}{4}x \leq \frac{4}{6}x - \frac{7}{9}$$

- A.  $[a, \infty)$ , where  $a \in [0.75, 1.5]$   
B.  $[a, \infty)$ , where  $a \in [-2.25, 0.75]$

- C.  $(-\infty, a]$ , where  $a \in [0, 6]$
- D.  $(-\infty, a]$ , where  $a \in [-2.25, 0]$
- E. None of the above.

7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$9 + 3x > 6x \text{ or } 6 + 9x < 10x$$

- A.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-11.25, -1.5]$  and  $b \in [-7.5, 2.25]$
- B.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-5.25, 4.5]$  and  $b \in [5.25, 6.75]$
- C.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-11.25, -3.75]$  and  $b \in [-7.5, 1.5]$
- D.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [0.75, 6]$  and  $b \in [2.25, 7.5]$
- E.  $(-\infty, \infty)$

8. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4x - 6 \geq 6x + 5$$

- A.  $[a, \infty)$ , where  $a \in [-0.2, 4]$
- B.  $(-\infty, a]$ , where  $a \in [-6.1, 0.9]$
- C.  $[a, \infty)$ , where  $a \in [-2.1, 1]$
- D.  $(-\infty, a]$ , where  $a \in [-0.9, 3.1]$
- E. None of the above.

9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-9x + 5 \leq 3x + 8$$

- A.  $[a, \infty)$ , where  $a \in [-0.63, 0]$

- B.  $(-\infty, a]$ , where  $a \in [-1.19, 0]$
- C.  $(-\infty, a]$ , where  $a \in [0, 0.27]$
- D.  $[a, \infty)$ , where  $a \in [-0.18, 0.5]$
- E. None of the above.

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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-7}{9} - \frac{4}{6}x < \frac{6}{5}x + \frac{10}{2}$$

- A.  $(a, \infty)$ , where  $a \in [-9, 0]$
  - B.  $(-\infty, a)$ , where  $a \in [-3.75, 0.75]$
  - C.  $(-\infty, a)$ , where  $a \in [1.5, 6]$
  - D.  $(a, \infty)$ , where  $a \in [3, 5.25]$
  - E. None of the above.
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